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LETTERS

PHYSICAL INACTIVITY AND COGNITIVE HEALTH

Postmodern epidemiology: public health informed by evidence

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Kivimäki and colleagues show that physical activity probably has no effect on dementia risk.[1] This is bad news for population health, as there was hope that physical activity could help prevent dementia.[2] But it could be good news for evidence based public health.

Using an interesting data analysis approach, the authors could limit the risk of reverse causation—that is, dementia causing reduction of physical activity. With this approach, the authors could move from a prediction exercise to a true causal inference study. Observational epidemiology aiming to address causal relations has suffered major drawbacks, notably in the domains of nutrition or environmental science, where numerous findings were not confirmed[3 4]; the null finding in the study by Kivimäki and colleagues, if confirmed, could uncover a new drawback of observational studies.

Such failures are dangerous for public health. To better inform evidence for public health, we must move towards a postmodern epidemiology, clearly distinguishing description, prediction, and causal inference in observational studies and taking advantage of new methods in causal analyses.[5]

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